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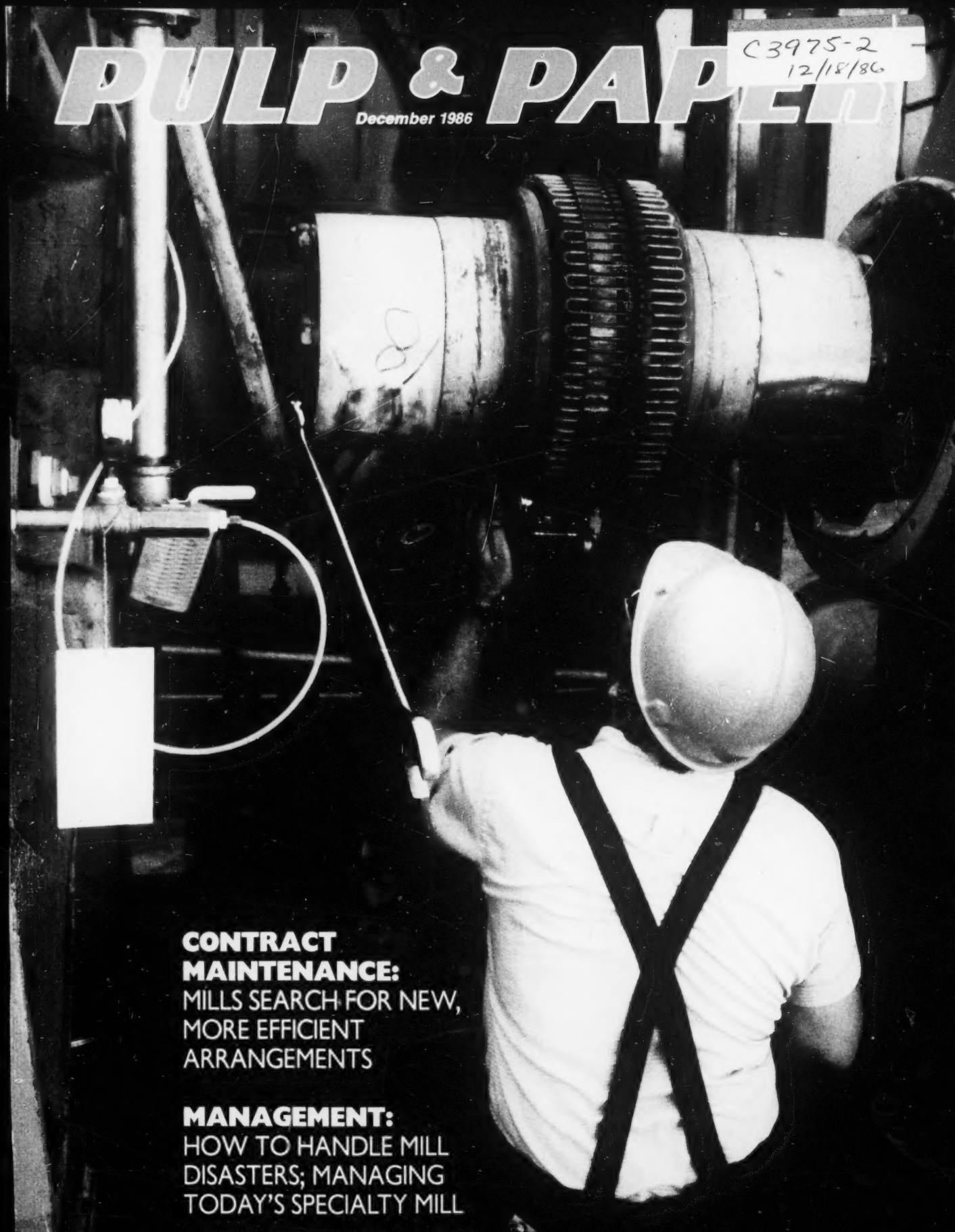
PULP & PAPER

December 1986



CONTRACT MAINTENANCE:
MILLS SEARCH FOR NEW, MORE EFFICIENT ARRANGEMENTS

MANAGEMENT:
HOW TO HANDLE MILL DISASTERS; MANAGING TODAY'S SPECIALTY MILL

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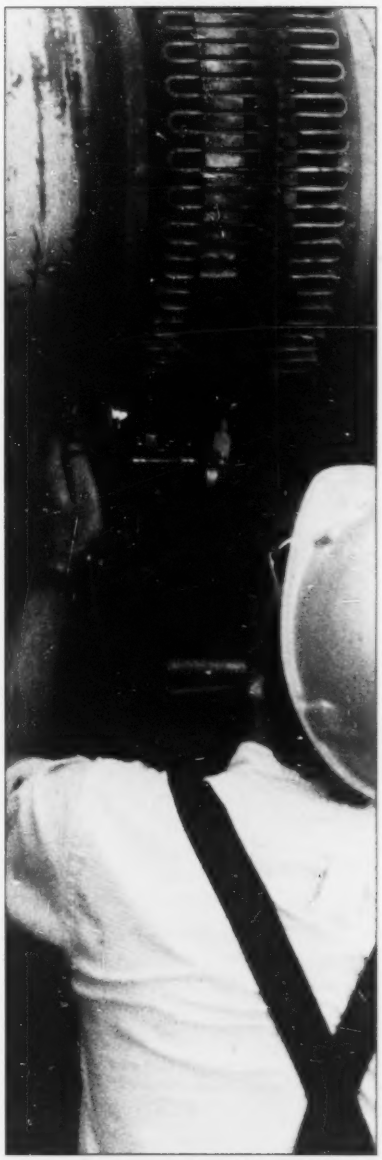

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Contract maintenance, an aspect of the December issue's focus on mill maintenance, is being increasingly relied upon by pulp and paper mills to improve cost-efficiency. **(Photo by Scott Robertson, BE&K Construction Co.)**

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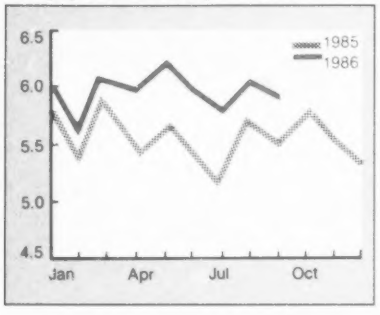
U.S. paper and board production



U.S. production of paper and paperboard totaled 5.9 million tons in September, up 6.1% from the previous year, according to American Paper Institute data. Production for the third quarter surged ahead at an 8.1% annual rate, the API said, and established a new seasonally adjusted high of 70.7 million tpy. Preliminary data for early October show that trend of record production continuing.

Among major grades, uncoated freesheet and bleached paperboard led the increases in September, with production for the first three quarters in both grades up 8.4% compared with last year. Packaging papers posted the only decline, while most other paper grades were up about 3.0% over last year and board grades rose an average of 7.0%. Corrugated box shipments set a new record for September, according to the Fibre Box Assn., and containerboard inventories were down 13% from the same period last year.

Canadian newsprint shipments were 4.1% ahead of last year's level, the Canadian Pulp & Paper Assn. reported. September market pulp shipments were up 3.7% despite the strike in British Columbia, with operating rates at 83% for the month. ■

	Latest month (000 short tons)		% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	Sept.	462	3.4	5,622	2.8
Uncoated groundwood (s)	Sept.	132	7.3	1,505	1.1
Coated paper (s)	Sept.	555	27.0	6,155	3.2
Uncoated free sheet (s)	Sept.	877	10.3	10,468	8.4
Other printing/writing	Sept.	112	1.8	1,375	2.5
Total packaging and other paper (s)	Sept.	425	−9.2	5,147	−1.7
Tissue	Sept.	419	5.8	5,064	3.0
Total paper	**Sept.**	**2,982**	**7.5**	**35,337**	**3.8**
Unbleached kraft paperboard	Sept.	1,437	2.1	17,593	6.8
Semichemical medium	Sept.	450	6.6	5,363	5.6
Bleached paperboard	Sept.	346	12.0	4,287	8.4
Recycled paperboard	Sept.	669	5.5	8,145	7.3
Total paperboard	**Sept.**	**2,902**	**4.7**	**35,387**	**7.0**
Total U.S. paper and paperboard output	**Sept.**	**5,884**	**6.1**	**70,723**	**5.4**
PULP, WASTEPAPER & FIBER[2]					
Total U.S. woodpulp production	Aug.	4,833	7.0	57,184	5.1
Market pulp production	Aug.	673	24.4	7,511	9.5
Wastepaper consumption at paper/board mills	Aug.	1,390	7.4	16,563	8.6
Pulpwood consumption (cords)	Aug.	7,582	9.5	91,226	6.4
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	Sept.	24.390	9.4	211.998[6]	5.7
Containerboard inventories at U.S. box plants and mills	Sept. 1	2,344	−13.0		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	Aug.	1,001	14.7	11,552	5.0
Imports of Canadian newsprint	Aug.	714	11.7	8,367[6]	3.7
U.S. paper exports (including products)	Aug.	394	10.7	4,708	17.7
Exports of unbleached kraft linerboard	Aug.	182	10.3	2,171	22.7
Exports of woodpulp	Aug.	418	38.0	4,403	14.3
Norscan pulp inventories[4]	Sept. 30	920	−34.1		
Norscan pulp operating rates[4]	Sept.	91%	97%	94%	91%
CANADIAN STATISTICS[5] *(reported in metric tons)*					
Total newsprint shipments	Sept.	840	19.1	6,928[6]	4.1
Operating rates	Sept.	91%	92%	93%	92%
Inventories held by U.S. consumers	Sept. 30	1,461	−4.3		
Other paper/board shipments	Sept.	509	13.6	4,494	10.5
Woodpulp shipments (export only)	Sept.	591	3.7	5,780[6]	11.3
Operating rates	Sept.	83%	74%	92%	87%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fibre Box Assn., Paperboard Packaging Council. 4. North American/Scandinavian paper-grade market pulp. 5. Canadian Pulp & Paper Assn. 6. Not annualized. (s) = Shipments.

NEWSPRINT: Market improvement will continue as producers play catch-up

Grade structure: Standard newsprint basis weight is 30 lb/3,000 ft². A range from 28 lb to 32 lb is common in the U.S., although there has been some shift to the lighter basis weights in New England and some southern mills. Brightness is typically in the 55 to 61 range. About 75% of all newsprint used in the U.S. is delivered to daily newspapers. Most of the remainder is shipped to government printers, weekly newspapers, and commercial printers for such end uses as newspaper inserts, flyers, and comic books.

Production/capacity: North American newsprint output appeared to be heading for a record year as U.S. shipments surged in August to an annualized rate of 5.632 million short tons, up 2.7% from a year earlier. Canadian shipments through the same eight-month period were up just 2%. At the same time, total U.S. newsprint consumption reached a new peak annual rate of close to 14 million tons in August, according to the American Paper Institute.

Canadian mills supplied 56.5% of U.S. newsprint requirements in the first eight months of 1986, down slightly from 57% a year earlier, according to the Canadian Pulp & Paper Assn. An extended shutdown of MacMillan Bloedel Ltd.'s Port Alberni, B.C., newsprint mill due to strikes, however, reduced Canadian supplies somewhat.

In addition, U.S. publishers continued to find alternate outside sources of supply, with U.S. imports from countries other than Canada accounting for 5.5% of the U.S. consumption total through August, compared with 2.5% a year earlier.

Outlook: Most industry observers expect a moderate increase in U.S. newsprint demand of about 2.5% and a minimal expansion in North American capacity of about 1.3% in 1987. This should continue to bolster business next year and lead to increasingly tighter markets through late in the decade.

U.S. newsprint consumption is projected to rise about 2.5% in 1986, 2.8% in 1987, and 2.5% in 1988. At the same time, less than 1% annual increases in North American newsprint capacity should boost mill operating rates to 92% in 1986, 94.5% in 1987, 96% in 1988, and 97.5% in 1989, according to a consensus of forecasters.

It is likely that the western region will rebound first, as it was already experiencing tighter markets in the second half of 1986 due to various factors. In addition to a strike at the Port Alberni mill, a strike at Tasman Pulp & Paper Ltd.'s New Zealand mill caused tonnage from Crown Forest Industries Ltd.'s Campbell River, B.C., mill to be diverted offshore to Tasman's markets. At the same time, the North Pacific Paper Corp. mill in Longview, Wash., was directed to increase shipments to Japan.

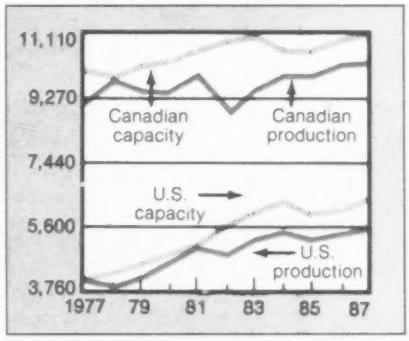
Pricing: Producers began in June to line up behind an attempt to raise prices 6.5% to $570/metric ton on Oct. 1. After failing to increase levels on seven previous occasions since July 1984 and following substantial discounting from late 1985 into the second half of 1986, producers appeared to be moderately successful in raising levels in the final quarter. Full implementation, however, was not expected until first-quarter 1987.

Some expect newsprint prices to go up as much as 8% to 10% in 1987 and to rise again in 1988. The next price announcment could come as early as next spring, observers indicated. Even the most conservative forecasts call for price improvement of about 5% in 1987.

List price history is as follows: (U.S. East, contract, year-end, per metric ton) 1974, $259; 1975, $284; 1976, $314; 1977, $331; 1978, $353; 1979, $413; 1980, $441/$470; 1981, $500; 1982, $468; 1983, $500; 1984, $535; 1985, $535; 1986, $535/$570.

Markets: Canada's market share in the U.S. was 57.1% in 1985, up from 56.9% in 1984 but down from 57.4% in 1983. Canada has supplied about 57% of U.S. demand for several years.

SUPPLY/DEMAND (000 tons)



FORECAST (000 tons)

	1985	1986e	1987e
United States			
Production[1]	5,428	5,480	5,550
Capacity[1]	5,820	5,825	5,845
Utilization rate	93.3%	94.1%	95.0%
Apparent U.S. consumption	13,611	12,788	13,920
lb/capita	113.6	114.1	114.5
GNP ratio	7.63	7.53	7.44
Canada			
Production[2]	9,907	10,170	10,500
Capacity[2]	10,825	11,040	11,110
Utilization rate	91.5%	92.1%	94.5%

e = *Pulp & Paper* estimate.
1. American Paper Institute data.
2. Canadian Pulp & Paper Assn. data.

TOP PRODUCERS (000 tpy)

	Annual capacity			Market share
	U.S.	Canada	Total	(%)
1. Abitibi-Price	372	1,759	2,131	12.6
2. Bowater[1]	1,010	230	1,240	7.4
3. CIP	—	1,174	1,174	7.0
4. Kruger	—	893	893	5.3
5. MacBlo	—	842	842	5.0
6. Kimberly-Clark[2]	431	395	826	4.9
7. Champion	802	—	802	4.8
8. Boise[3]	517	283	800	4.8
9. Con-Bath	—	738	738	4.4
10. Ontario	—	735	735	4.4

Market share of top five companies:
37.2%

Market share of top ten companies:
60.4%

Total North American capacity (1986):
16.859 million tons

1. Includes Catawba Newsprint Co. (51.0% owned), Calhoun, Tenn., and Bowater Mersey Paper Co. Ltd. (51.0% owned).
2. Includes Spruce Falls Power & Paper Co. Ltd. (50.5% owned).
3. Includes Boise Southern, DeRidder, La.

SALES & EARNINGS

Paper industry profits soar

Paper companies reported improved earnings for the second consecutive quarter. Third-quarter earnings for U.S. paper/forest products companies were up 30.4% on a 4.8% increase in sales. The healthy showing was largely attributed to higher exports helped by the weak U.S. dollar, cost-cutting measures in place at most mills, and improving prices for pulp, linerboard, and uncoated free-sheet.

International Paper Co. reported a 23% jump in third-quarter profits compared with the second quarter. Excluding a $23-million charge IP took in the 1985 period for an early retirement program, IP's earnings almost doubled. Chairman and CEO John A. Georges commented, "Our results reflect the impact of cost-reduction programs, improved manufacturing operations, and firmer markets in most of our pulp, paper, and paperboard product lines." This offset the depressed price of IP's timber and wood products, a higher effective tax rate, and interest charges for the acquisition of Hammermill Paper Co. stock.

Hammermill managed to swallow a $21.3-million charge incurred from settling the merger agreement with IP and still turn in a large increase in earnings. W. Craig McClelland, president and CEO, attributed the performance to "our continued programs of marketing initiatives, cost control, effective asset utilization, and improving conditions in several lines."

James River Corp., now the second-largest U.S. paper company after IP, reported an 83.3% increase in earnings for its third-quarter ended July 27. Sales and earnings included contributions by recent acquisitions: Crown Zellerbach Corp., Cerex, Premoid, Canada Cup Inc., and Handi-Kup. James River reported that the assimilation of CZ, with ongoing sales of about $1.8 billion, is proceeding on time. Although prices for CZ's coated paper declined from 1985 levels, the market seems to be accepting James River's 5% price increase for commercial and industrial tissue.

With an earnings increase of 68%, Champion International Corp. seems to have digested its acquisition of St. Regis Corp. Savings were also realized by a restructuring program implemented July 1.

Market pulp comeback. Producers of market pulp owe the most gratitude to the declining dollar, which spurred export demand. Most pulp prices in the third quarter were up about $80/ton from the beginning of the year, and another $40 increase is being pushed through in the fourth quarter.

Weyerhaeuser Co. had a 61% rise in third-quarter earnings on an 8.5% increase in sales. Besides pulp, Weyco attributed this to strong lumber and plywood markets and improving containerboard prices. Weyco managed to turn in a profitable performance despite a strike that closed most of its sawmills in the Pacific Northwest for about 40 days during the quarter. Strikers have idled Weyco's Canadian logging since July 22.

Georgia-Pacific Corp. said operating profits in its pulp and paper segment rose to $51 million from $5 million last year, thanks to the weaker dollar and improved demand. G-P

U.S. paper/forest products industry third-quarter results.

	Third quarter ($000)			
Companies	**Sales**	**Change 1986/85**	**Earnings[1]**	**Change 1986/85**
Boise Cascade	$959,530	2.7%	$13,240[3]	−34.9%
Bowater Inc.	237,337	8.4	9,580	−41.9
Champion International	1,110,884	−16.5	63,834[3]	68.2
Chesapeake Corp.	161,822	1.1	6,189	80.8
Consolidated Papers	157,986	−8.1	20,183	−15.6
Federal Paper Board	222,028	23.5	9,920	385.3
Fort Howard Paper	450,095	24.0	42,506	−3.7
Georgia-Pacific	1,909,000	8.9	97,000[3]	67.2[4]
P. H. Glatfelter	68,713	5.8	9,000	8.7
Great Northern Nekoosa	514,500	8.2	34,600	260.4
Hammermill Paper	442,096	6.0	15,400[5]	175.0
International Paper	1,250,000	12.6	85,000	466.6[6]
James River (7/27)	1,100,000	74.9	46,200[7]	83.3
Jefferson Smurfit	267,202	71.7	7,783	102.7
Kimberly-Clark	1,065,000	4.9	63,000	1.1
Longview Fibre (7/31)	129,467	17.2	9,620	153.4
Louisiana-Pacific	407,390	22.6	22,200	55.1
Mead Corp.	837,400	18.0	36,300[8]	53.5
Mosinee Paper	49,837	4.1	1,034	−59.7
Pentair Inc.	163,174	26.4	3,169	−30.9
Pope & Talbot	78,055	−4.7	4,278	124.8
Potlatch Corp.	249,955	4.3	16,737	48.5
Scott Paper	819,700	7.0	38,200[9]	−32.1
Sonoco Products	240,604	6.5	13,050	5.6
Temple-Inland	333,800	7.4	20,100	14.8
Union Camp	515,910	11.2	36,427	80.8
Wausau (8/31)	57,121	8.0	2,919	2.8
Westvaco	463,043	10.5	25,938[2]	11.9
Weyerhaeuser	1,400,000	8.5	62,200	61.1
Willamette Industries	300,271	4.5	21,338	44.5
Total	**15,961,920**	**4.8%**	**$836,945**	**30.4%**

1. Income after taxes from continuing operations, excluding most significant items in both years.
2. Includes pretax gain of $6.7 million from the sale of certain operations.
3. Reflects change in method of accounting that reduced pension costs.
4. 1985 quarter included $30-million loss from disposal of discontinued oil and gas unit.
5. Includes one-time pretax gain from sale of Manning Paper Co. and settlement of insurance claim equaling $3.6 million. Includes one-time pretax loss of $21.3 million for defending against tender offer.
6. 1985 quarter included a $23-million charge for early retirement program.
7. Reflects acquisition of Crown Zellerbach Corp.
8. Includes one-time pretax charge of $13.2 million from discontinued operations.
9. Includes $38 million charge for a nine-week strike at Scott's Mobile, Ala., mill.

also said demand for its building products is healthy, although it said it is suffering from high levels of Canadian softwood lumber imports.

Great Northern Nekoosa Corp. had record third-quarter earnings of $34.6 million—more than triple the figure for the same period last year. Chairman William R. Laidig said, "We announced price increases in market pulp, containerboard, some business papers, and newsprint, effective Oct. 1. Costs remain under control, and our manufacturing facilities are in excellent operating condition."

Paperboard still on upswing. Jefferson Smurfit Corp.'s earnings improved 102.7% over 1985's third quarter on a 71.7% increase in sales. After Smurfit and the Morgan Stanley Leveraged Equity Fund acquired Container Corp. of America early in the fourth quarter, Smurfit became one of the biggest U.S. paperboard/packaging/wastepaper recycling companies.

Federal Paper Board Co. reported record third-quarter sales and a $2.4 million increase in earnings over the second quarter. The company's president, John R. Kennedy, said Federal benefited from an August price increase in bleached paperboard and "continued good backlogs." He reported that the bleached board mills in Augusta, Ga., and Riegelwood, N.C., set new production records during the third quarter.

Potlatch Corp. turned in a 48.5% increase in earnings for the quarter. The company said third-quarter shipments and selling prices for bleached paperboard were ahead of year-earlier levels. Its wood products group recorded its third consecutive profitable period, taking advantage of the prolonged wood products strike in Canada and more demand for domestic output.

Tissue producers struggle. Scott Paper Co.'s earnings in the third quarter were down 32%, although the company had record sales in the third quarter of $819.7 million. Scott attributed much of the decline in profits to a nine-week strike at its Mobile, Ala., mill and estimated earnings would otherwise have increased about 40%.

Kimberly-Clark Corp. managed to improve earnings by 1.1%, and Fort Howard Paper Co. took a 3.7% decline in profits. Prices suffered in food service disposables and tissue products. The company is counting on a 5% price hike in industrial tissue to ease the situation. ■

Canadian profits soar despite IWA strike

Canadian pulp and paper companies continued to enjoy the strong rebound in earnings begun in the second quarter, racking up a 119% increase in profits in the third quarter compared with the depressed year-earlier period. Sales for the quarter were up 9.8%, according to a *Pulp & Paper* survey of results from 14 companies. The strong earnings performance was attributed to the increase in pulp prices, improved operating rates for newsprint, better prices for most paper grades, and the weak Canadian dollar.

Because of these factors, many companies managed to offset the effects of the ongoing strike in British Columbia begun by members of the International Woodworkers of America in the middle of July. Observers estimate the strike has cost the Canadian industry, province, and workers about C$10 million a day. The strike has also resulted in a shortage in lumber and woodchips, causing some sawmills and pulp mills not directly involved in the dispute to curtail operations.

Strike impact. Although MacMillan Bloedel Ltd. enjoyed a 162% increase in profits during the third quarter, its earnings of C$47.4 million showed a decline from the C$90.4 million level that had been recorded in the second quarter. President and CEO of the company, Ray Smith, said this decline is largely due to the IWA strike, which has shut down the MB's British Columbian logging operations, IWA-certified lumber mills, and curtailed production at the Alberni and Harmac, B.C., pulp mills. Smith said the 10% increase in sales could be attributed to "higher shipment volumes of newsprint, pulp, corrugated containers, and building materials combined with higher prices for pulp and paper."

Canfor Corp. was also hard hit by the strike, but the company nevertheless managed a 190% increase in profits over the depressed levels of last year. Its Howe Sound Pulp Div. in Port Mellon, B.C., has been temporarily idled due to a lack of woodchips. The company's mill in Prince George, B.C., was down for the entire month of October for boiler maintenance, making a healthy showing in the fourth quarter unlikely even if the countervailing duty is struck down.

Canadian paper/forest products industry third-quarter results.

	Third quarter (C$000)			
Companies	**Sales**	**Change 1986/85**	**Earnings[1]**	**Change 1986/85**
Abitibi-Price	C$716,500	13.1%	C$31,100[2]	22.4%
British Columbia Forest Products	258,300	−7.0	9,500	111.1
Canfor Corp.	284,500	2.9	12,500	189.3
Consolidated-Bathurst	523,183	19.6	29,693[3]	32.7
Crown Forest Industries	221,000	−4.0	13,200[4]	73.7
Domtar Inc.	585,000	11.3	33,500[5]	73.6
Donohue Inc.	124,200	22.1	8,300	118.4
Fraser Inc.	150,000	14.1	5,800	344.9
Great Lakes Forest Products	159,369	0.9	8,853	759.2
MacMillan Bloedel	657,600	10.1	31,700	161.9
Paperboard Industries	20,400	16.6	1,180	107.0
Rolland Inc.	88,100	19.2	1,291	22.7
Scott Paper Ltd.	68,525	9.7	3,559	12.8
West Fraser Timber	110,400	27.0	14,100	228.0
Total	**C$3,967,097**	**9.8%**	**C$204,276**	**119.0%**

1. Income after taxes from continuing operations, excluding most significant nonrecurring items in both years.
2. 1986 quarter excludes extraordinary charge of C$2.3 million from writedown of certain assets and reflects change in method of accounting that reduced pension costs.
3. Includes a one-time debit of C$3.030 million from shut down of a mill. Last year's quarter excludes one-time pretax gain of C$7.136 million.
4. Excludes one-time loss of C$10.3 million from restructuring of Crown Stores subsidiary.
5. This year's quarter excludes extraordinary gain of C$3.9 million. 1985 quarter excludes extraordinary gain of C$5.8 million.
6. Quarter ended Aug. 31.

The Mackenzie, B.C., pulp mill of British Columbia Forest Products Ltd. has also joined the ranks of those idled because of the strike, and this has contributed to a 7% decline in sales during the third quarter. Profits remained strong, however, at about 110% over last year's period.

Crown Forest Industries Ltd. saw its sales decrease by 4% during the quarter, but the company's earnings were 74% over last year, reaching their highest level in seven years. Strong demand and improved pulp prices "more than offset" the effect of the British Columbian strike.

Eastern results. Companies located in eastern Canada showed higher profits for the third quarter in general. Consolidated-Bathurst Inc. reported that higher shipments, improved prices in bleached kraft pulp, and good results in its U.K. newsprint operations accounted for the company's 33% increase in profits during the period. Con-Bath plans to complete the construction of a new CTMP bleach plant at its mill in Bathurst, N.B., by the end of the year.

Thanks to lower manufacturing costs and higher average exchange premiums on U.S. dollar sales, Great Lakes Forest Products Ltd. recorded a large increase in profits. While increased shipments of fine paper and kraft pulp aided sales, lower shipments of building products and newsprint offset these gains. The company said the countervailing duty could "jeopardize the future of our lumber operations."

The 15% countervailing imposed by the U.S. on softwood lumber from Canada—on which a final determination is expected to be made in December—is creating uncertainty in the fourth quarter. Still, most Canadian producers are looking forward to reaping the results of the Oct. 1 newsprint price hike (US$35/ton) and another hike in market pulp prices. ■

EXPANSIONS

Consolidated Papers plans kraft pulp expansion

Consolidated Papers Inc. has submitted permit applications to the Wisconsin Dept. of Natural Resources for a $48-million expansion project that would increase pulp production at the company's kraft division to 1,000 tpd.

The plan includes a new 1.4-million lb/day black liquor solids recovery boiler, expansion of the existing lime kiln from 180 to 300 tpd, and a new smelt dissolving tank, according to H. Maxwell Hughson, vice president of manufacturing. The division currently manufactures over 600 tpd of pulp.

"As we have expanded our papermaking capabilities, it seems prudent that we consider expansion of our pulpmaking operations to obtain the quality raw material necessary to keep us the leader in enamel printing paper and specialty paper.

"These improvements would enable us to achieve the 1,000 [illegible]s of pulp per day needed to better supply our four papermaking divisions with hardwood and softwood kraft pulp," Hughson said.

In its third-quarter report, George W. Mead, chairman and CEO, said the company in 1985 supplied 74% of its own pulp needs. But additional fiber will be needed for the recently completed No. 26 coated groundwood machine in Wisconsin Rapids, Wis.

Consolidated has three sources of fiber, Mead said. The first is thermomechanical and groundwood pulp for magazine and catalog papers. The company always keeps some spare capacity on hand and manufactures what it needs. For the second source, hardwood and softwood kraft pulp, Consolidated fills all its own hardwood and softwood needs to the extent of the kraft mill capacity. The firm also purchases softwood pulp.

Normally, the company does not like its purchased softwood pulp to exceed 15% to 20% of total fiber needs. Yet the 660-tpd machine will require the company to buy about 30% or more in 1987, Mead said. ■

Ottawa blamed for delay in Gaspé SC mill project

Saugbrugsforeningen is ready to build a C$377-million supercalendered (SC) paper mill in the Gaspé peninsula town of Matane, Que., but the project is pending funding approval from the federal government, Quebec government officials said.

The mill, which would produce about 180,000 metric tpy, would be built in conjunction with Rexfor, the provincial forestry agency. The province and the federal government are to share the costs of financing equally, but details of the package have not been disclosed. According to one report, Saugbrugsforeningen and Rexfor each will put up C$40 million, with the remaining C$297 million being financed by the two governments.

The province reportedly approved the financing worked out in June. Delays in getting approval from Ottawa have increased cost estimates for the mill by C$50 million since last spring, according to one account. It was noted, however, that Saugbrugsforeningen and Rexfor had both agreed in writing to absorb any additional costs rather than seek more funding.

In the meantime, however, Quebecor Inc. and Redec (Canada) Inc. have not yet officially given up on a proposal to build a 180,000-metric-tpy newsprint mill at the same location. This project was mothballed when the province decided on the SC mill plan instead, but that could change if funding is not secured. On the other hand, Quebecor is also interested in acquiring at least part of Donohue Inc. for its newsprint holdings, which would redirect its investment plans. ■

Fibreco going ahead with plans to build BCTMP mill

Fibreco Export Inc. is going ahead with plans to build a bleached chemithermomechanical market pulp mill with capacity for 180,000 metric tpy in interior British Columbia, chairman Gordon Steele and president Tony Jarrett announced recently. Financing for the C$170-million mill has been completed, preparations for construction will begin immediately, and an exact site will be announced in the near future. Startup is scheduled for late 1988.

The mill will have two separate lines to ensure that pulps are made to various customer specifications, according to Jarrett. "The equipment and technology will be the best available on the market." Ekman & Co. AB of Sweden will have worldwide exclusive sales and marketing responsibility for the mill's output.

Fibreco was formed in 1977 by 38 British Columbian interior sawmill companies to develop an international market for residual woodchips. The company has become a leading exporter of chips through its bulk terminal in North Vancouver, B.C. "The new pulp mill is a logical extension of

Papermaking: Consumption, prices moving with production

Consumption. As production of paper and paperboard reaches record-breaking levels, the additives that help achieve those marks, too, have moved parallel to consumption. The two major inputs, rosin size and aluminium sulfate, have been in decline in a unit applied per machine perspective, but machine capacity increases have helped to maintain their overall market consumption. Alkaline papermaking has also hedged in on alum and rosin use but not nearly as quickly or as thoroughly as initially forecasted. The difference in addition for alum for a conversion is roughly 50%. Alum is also a cheap retention aid, although pH must be controlled in narrow range to make it effective. The cost advantage is important, especially since other process aids are helping to retain alum and therefore reduce its consumption rate.

The emphasis today is on customized or specialized products which afford opportunities to mills for the uniformity and runability required in today's market. Ever increasing amounts of wet- and dry-strength additives are being used across all grades. Typical addition rates are around 1 to 2 lb/ton on wood and woodfree grades, and sometimes as high as 10 lb/ton for board grades. The rates also vary with regard to strength and quality requirements

Retention and drainage aids, mostly sold as a unit although not exclusively, are consumed in the 1 lb/ton area, unless a system has excessive fines or high ash content. Significant development of polymers over the past 20 years has helped consumption growth of these operational aids.

Additionally, as suppliers continue to introduce new and more operation-specific products, their use should remain at a strong level. Biocides, dispersants and chlorine dioxide are also in a competition against microorganisms that create flaws in the sheet. A host of chemical compounds, both organic and inorganic, are being applied in under 1 lb/ton additions in the average case.

The wet end additives with the most potential for usage growth in paper and paperboard processing (excluding modified starches) are synthetic sizes. Already applied in newsprint systems using secondary fiber furnishes and alkaline papermaking systems, AKA, AKD, PVAc, CMC and others improve strength, stiffness and surface characteristics of paper. The wet end conditions currently using these products are predicted to grow at a great rate over the short and long terms, and synthetic sizes will grow along with them. The average usage rate is between 2 to 4 lb/ton.

They are not wet end additives per se, but felt conditioners and wire life extenders are also included in the specialty area. Their growth is also predicted to run strong through the next decade. Addition rates hover at around 1 lb/ton, depending on the contaminants in the furnish. The use of felt conditioners and wire life extenders has been strongest in newsprint and other secondary fiber furnishes. However as technologies change requiring more sophisticated clothing, so too do the chemicals to enhance their value in life and performance.

Price. Suppliers in the specialty chemical for papermaking market have been very active over the past years, jockeying for position by introducing new products, modifying or expanding producing locations, and making management moves facilitating favorable vantage points. Hercules Inc. started up a 40-million/lb plant for emulsified sizing products. Diamond Shamrock Chemical Co. acquired Economics Laboratory Inc.'s Pulp & Paper Division. Exxon Chemical Americas bought Callaway Chemicals Co. Foreign competition will come from AKZO Chemie America, purchasers of Monsanto Co.'s wet end product line, and Tenneco Inc. which has been successful in Canada and is now establishing a base in the Southeast. Nalco Chemical Co. Pulp & Paper Chemicals Group, Dow Chemical Co. and Betz Paperchem Inc. will of course maintain their efforts in this market as well. The one casualty besides Monsanto is Borden Inc., which bowed out in 1985.

The prices for the commodity chemicals, alum and rosin, have been flat for five years and discounting has been evident. For alum, there are indications that prices are firming due to an increase in consumption (due to paper production) and some reduction in supply. Specialties vary due to the manufacturers' delivered form and formulation, but most are around $1/lb. Prices for these products are only expected to go up when formulations change (i.e., new product introduction) because many intermediate chemicals used in the the formulas are in long supply.

TABLE 1: **Papermaking additives growth predicted for the 1980s (excluding starches).**

Chemical	1986 value (millions dollars)	1990 value (millions dollars)	Change per year (%)
Alum	65	70	+1.0
Rosin	133	150	+1.0
Wet-strength	80	103	+6.5
Dry-strength	80	100	+6.0
Defoamers, dispersants	36	46	+6.0
Biocides	40	48	+4.5
Synthetic sizes	30	41	+8.0
Retention aids	51	67	+7.0
Felt cleaners	10	16	+10.0